IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended)   A method of transmitting data using multi-carrier Code-Division Multiple Access (CDMA) for accessing a transmission system, the method comprising ~~a step of~~ the acts of:

modulating the data to be transmitted using Orthogonal Frequency-Division Multiplexing (OFDM) for producing OFDM modulated data symbols; and ~~a step of~~

spreading the OFDM modulated data symbols with spreading codes including a set of predefined sequences ~~wherein the sequences are predefined so that they~~ that satisfy predetermined auto-correlation and/or cross-correlation criteria within a region around ~~the~~ ~~origin, defined as~~ a central point of an Interference-Free Window (IFW), wherein a length of the IFW is greater than a channel delay spread of a transmission channel including a set of multi-paths

with associated time lengths, the transmission channel having a

channel delay spread defined as a time length corresponding to an

estimate of a difference between the time lengths of at least two

different multi-paths.

2. (Currently Amended) A—The method as claimed in claim 1,

wherein the transmission system comprises a transmitter, a receiver

and a transmission channel, for transmitting the data from the

transmitter to the receiver via the transmission channel, ~~the~~

~~transmission channel including a set of multi-paths with associated~~

~~time lengths, the transmission channel having a channel delay~~

~~spread defined as a time length corresponding to an estimate of a~~

~~difference between the time lengths of at least two different~~

~~multi-paths,~~ the length of the Interference-Free Window (IFW)

depending on the channel delay spread.

3. (Currently Amended) A—The method as claimed in claim 1,

wherein the sequences are such that their off-peak partial

autocorrelation and partial cross-correlation values are zero

within the Interference-Free Window (IFW).

4.(Currently Amended) A The method as claimed in claim 2,

wherein the sequences are such that they comprise zero gaps.

5.(Currently Amended) A transmitter for transmitting data

using multi-carrier Code-Division Multiple Access (CDMA) for

accessing a transmission system, the transmitter comprising:

a modulator for modulating the data to be transmitted using

Orthogonal Frequency-Division Multiplexing (OFDM) for producing

OFDM modulated data symbols; and

a mixer for spreading the OFDM modulated data symbols with

spreading codes including a set of predefined sequences, wherein

the sequences are predefined so that they satisfy predetermined

auto-correlation and/or cross-correlation criteria within a region

around the origin, defined as a central point of an Interference-

Free Window (IFW), wherein a length of the IFW is greater than a

channel delay spread of a transmission channel including a set of

multi-paths with associated time lengths, the transmission channel

having a channel delay spread defined as a time length

corresponding to an estimate of a difference between the time

lengths of at least two different multi-paths.

6. (Currently Amended)   A method of receiving multi-carrier data sequences transmitted via a transmission system using multi-carrier Code-Division Multiple Access (CDMA) for accessing the transmission system, the data sequences being OFDM modulated before being spread with a set of predefined sequences satisfying predetermined auto-correlation and/or cross-correlation criteria within a region around ~~the origin, defined as~~ a central point of an Interference Free Window (IFW), the method comprising a step of demodulating the received multi-carrier data sequences with respect to a predefined set of sub-carriers and with respect to the set of predefined data sequences, wherein a length of the IFW is greater than a channel delay spread of a transmission channel including a set of multi-paths with associated time lengths, the transmission channel having a channel delay spread defined as a time length corresponding to an estimate of a difference between the time lengths of at least two different multi-paths.

7. (Currently Amended)   A receiver for receiving data sequences

transmitted via a transmission system using multi-carrier Code-Division Multiple Access (CDMA) for accessing the transmission system, the data sequences being OFDM modulated before being spread with a set of predefined sequences satisfying predetermined auto-correlation and/or cross-correlation criteria within a region around ~~the origin, defined as~~ a central point of an Interference-Free Window (IFW), the receiver comprising a set of rake combiners tuned to associated sub-carriers for demodulating the received data sequences, wherein a length of the IFW is greater than a channel delay spread of a transmission channel including a set of multi-paths with associated time lengths, the transmission channel having a channel delay spread defined as a time length corresponding to an estimate of a difference between the time lengths of at least two different multi-paths.

8.(Currently Amended) A computer readable medium embodying a computer program product ~~for a transmitter computing~~ including a set of instructions, which when loaded in ~~the receiver~~ a transmitter, causes the ~~receiver~~ transmitter to carry out the method as claimed in claim 1.

9.(Currently Amended) A computer readable medium embodying a computer program product ~~for a receiver computing~~ including a set of instructions, which when loaded in ~~the~~ a receiver, causes the receiver to carry out the method as claimed in claim 6.

10.(Currently Amended) A system comprising at least a transmitter and a receiver for transmitting data from the transmitter to the receiver using multi-carrier Code-Division Multiple Access (CDMA) for enabling the transmitter to access the transmission system, the data to be transmitted being modulated using Orthogonal Frequency-Division Multiplexing (OFDM) before being spread with a set of predefined sequences wherein the sequences are predefined so that they satisfy predetermined auto-correlation and/or cross-correlation criteria within a region around ~~the origin, defined as~~ a central point of an Interference-Free Window (IFW), wherein a length of the IFW is greater than a channel delay spread of a transmission channel including a set of multi-paths with associated time lengths, the transmission channel having a channel delay spread defined as a time length

corresponding to an estimate of a difference between the time

lengths of at least two different multi-paths.

11. (New)   The method of claim 1, wherein the at least two

different multi-paths include a longest path having a maximum

length and a shortest path having a minimum length.

12. (New)   The transmitter of claim 5, wherein the at least two

different multi-paths include a longest path having a maximum

length and a shortest path having a minimum length.

13. (New)   The method of claim 6, wherein the at least two

different multi-paths include a longest path having a maximum

length and a shortest path having a minimum length.

14. (New)   The receiver of claim 7, wherein the at least two

different multi-paths include a longest path having a maximum

length and a shortest path having a minimum length.

15. (New)   The system of claim 10, wherein the at least two

different multi-paths include a longest path having a maximum

length and a shortest path having a minimum length.